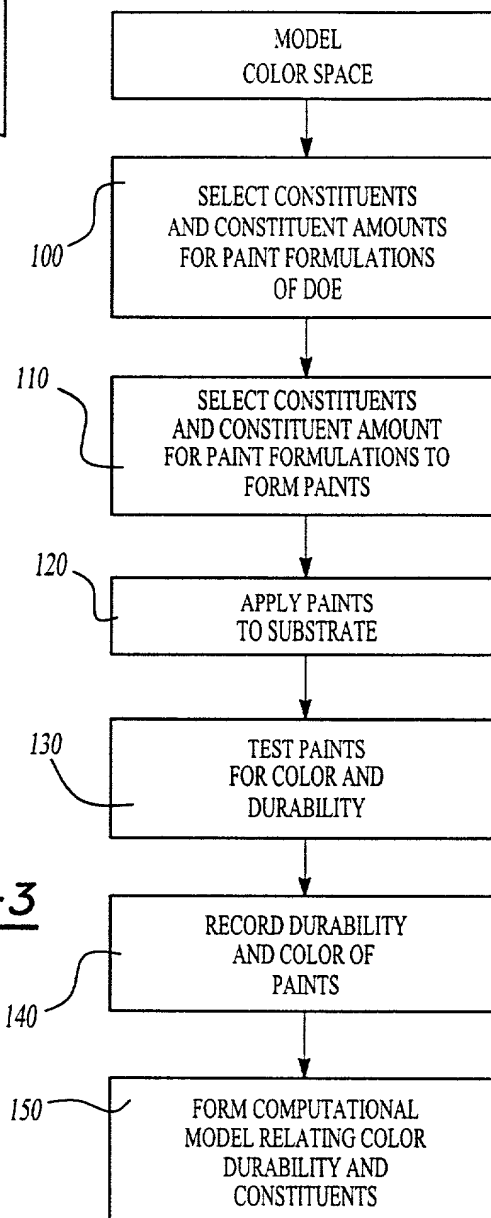


**Fig-1**



**Fig-3**

DESIGN FACTORS:

FACTORS	FUNCTION	LEVELS
PERYLENE	BACKBONE OF SPACE	5 - 60%
QUINDACRIDONE	BLUE TINT	0 - 40%
RUSSET MICA	PEARL AND BLUE	0 - 50%
ALUMINUM	LIGHTNESS/DARKNESS & HIDING	5% (CONSTANT)
BLACK	LIGHTNESS / DARKNESS & HIDING	0.5% (CONSTANT)
TRANS RED OXIDE	LIGHTNESS / DARKNESS	2% (CONSTANT)

CHART A

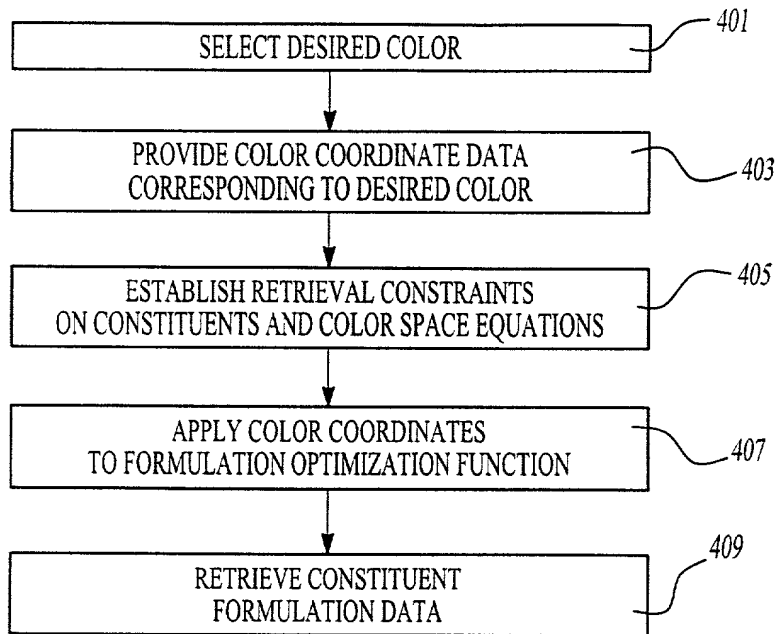
DESIGN LEVELS:

RUN	FACTORS					
	PERYLENE	BLUE RUSSET MICA	QUINACRIDONE	RED IRON OXIDE	BLACK	ALUMINUM
1	60.00	32.00	0.00	2.50	0.50	5.00
2	60.00	0.00	32.00	2.50	0.50	5.00
3	5.00	50.00	37.00	2.50	0.50	5.00
4	42.00	50.00	0.00	2.50	0.50	5.00
5	52.00	0.00	40.00	2.50	0.50	5.00
6	5.00	47.00	40.00	2.50	0.50	5.00
7	37.33	29.83	24.83	2.50	0.50	5.00
8	56.00	0.00	36.00	2.50	0.50	5.00
9	51.00	41.00	0.00	2.50	0.50	5.00
10	5.00	48.50	38.50	2.50	0.50	5.00
11	60.00	16.00	16.00	2.50	0.50	5.00
12	23.50	50.00	18.50	2.50	0.50	5.00
13	28.50	23.50	40.00	2.50	0.50	5.00
14	48.67	30.92	12.42	2.50	0.50	5.00
15	48.67	14.92	28.42	2.50	0.50	5.00
16	21.17	39.92	30.92	2.50	0.50	5.00
17	39.67	39.92	12.42	2.50	0.50	5.00
18	44.67	14.92	32.42	2.50	0.50	5.00
19	21.17	38.42	32.42	2.50	0.50	5.00

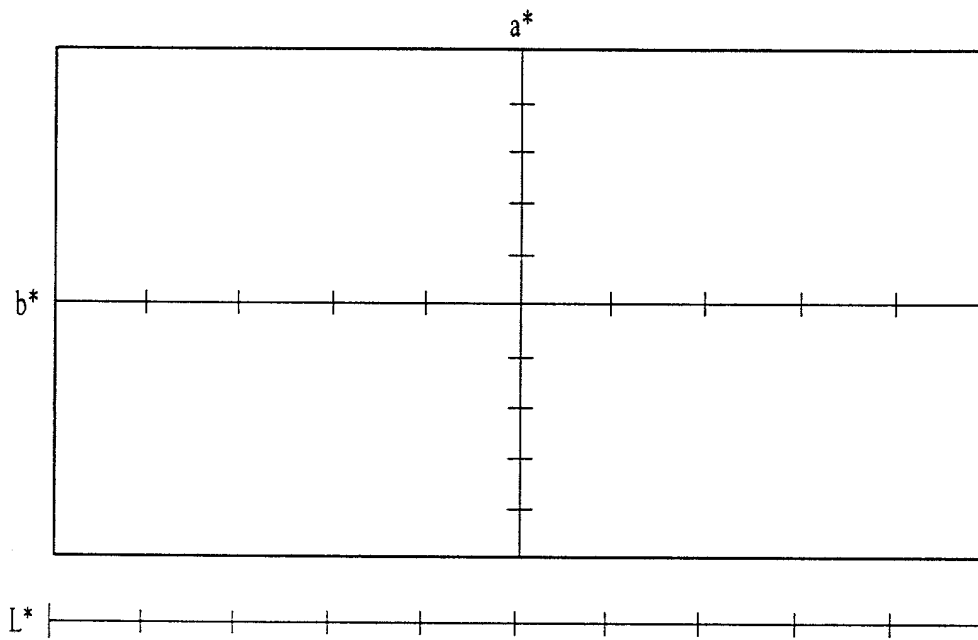
CHART B

**Fig-2**





**Fig-4**



**Fig-6**

	A	B	C	D	E	F	G	H	I	J	K	L
1				PIG1	PIG2	PIG3	PIG4	PIG5				
2			FORMULATION DATA	C1 <sub>25</sub>	C2 <sub>25</sub>	C3 <sub>25</sub>	C4 <sub>25</sub>	C5 <sub>25</sub>				
3			FORMULATION DATA	C1 <sub>45</sub>	C2 <sub>45</sub>	C3 <sub>45</sub>	C4 <sub>45</sub>	C5 <sub>45</sub>				
4			FORMULATION DATA	C1 <sub>75</sub>	C2 <sub>75</sub>	C3 <sub>75</sub>	C4 <sub>75</sub>	C5 <sub>75</sub>				
5												
6			UPPER PI:P CONSTRAINT	(p <sub>1</sub> :P) <sub>u</sub>	(p <sub>2</sub> :P) <sub>u</sub>	(p <sub>3</sub> :P) <sub>u</sub>	(p <sub>4</sub> :P) <sub>u</sub>	(p <sub>5</sub> :P) <sub>u</sub>				
7			LOWER PI:P CONSTRAINT	(p <sub>1</sub> :P) <sub>l</sub>	(p <sub>2</sub> :P) <sub>l</sub>	(p <sub>3</sub> :P) <sub>l</sub>	(p <sub>4</sub> :P) <sub>l</sub>	(p <sub>5</sub> :P) <sub>l</sub>				
8												
9			K	k1	k2	k3	k4	k5				
10		L*	K L25	k1 L25	k2 L25	k3 L25	k4 L25	k5 L25				
11	25	a*	K a25	k1 a25	k2 a25	k3 a25	k4 a25	k5 a25				
12		b*	K b75	k1 b25	k2 b25	k3 b25	k4 b25	k5 b25				
13		L*	K L45	k1 L45	k2 L45	k3 L45	k4 L45	k5 L45				
14	45	a*	K a45	k1 a45	k2 a45	k3 a45	k4 a45	k5 a45				
15		b*	K b75	k1 b45	k2 b45	k3 b45	k4 b45	k5 b45				
16		L*	K L75	k1 L75	k2 L75	k3 L75	k4 L75	k5 L75				
17	75	a*	K a75	k1 a75	k2 a75	k3 a75	k4 a75	k5 a75				
18		b*	K b75	k1 b75	k2 b75	k3 b75	k4 b75	k5 b75				

L* a* b*	C/S MODEL EQUATIONS
DESIRED a* <sub>25</sub>	L* <sub>25</sub>
DESIRED b* <sub>25</sub>	a* <sub>25</sub>
DESIRED L* <sub>25</sub>	b* <sub>25</sub>
DESIRED a* <sub>25</sub>	L* <sub>25</sub>
DESIRED b* <sub>25</sub>	a* <sub>25</sub>
DESIRED L* <sub>25</sub>	b* <sub>25</sub>
DESIRED a* <sub>25</sub>	L* <sub>25</sub>
DESIRED b* <sub>25</sub>	a* <sub>25</sub>
DESIRED L* <sub>25</sub>	b* <sub>25</sub>
DESIRED a* <sub>25</sub>	L* <sub>25</sub>
DESIRED b* <sub>25</sub>	a* <sub>25</sub>
DESIRED L* <sub>25</sub>	b* <sub>25</sub>

<= SOLVER TARGET

Fig-7

SK\$10
\$D\$2:\$H\$4
(DESIRED L \*25 COORDINATE VALUE)

—
SOLVER PARAMETERS

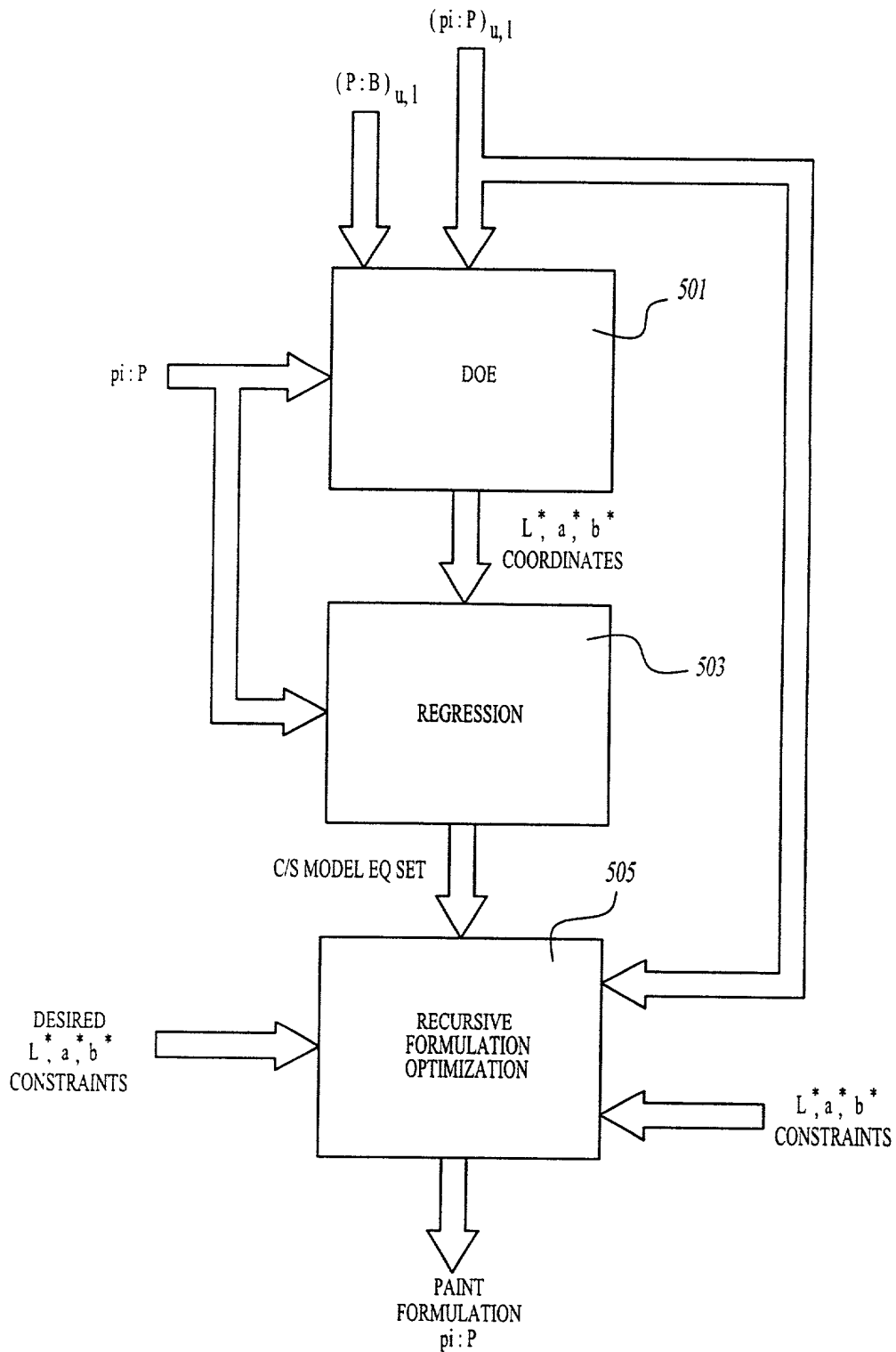
SET TARGET CELL:   
EQUAL TO:    MAX    MIN    VALUE OF:   
BY CHANGING CELLS:   
SUBJECT TO THE CONSTRAINTS

**Fig-8**

```

$D$2:$D$4<=$D$6
$D$2:$D$4>=$D$7
&ES2:$E$4<=$E$6
$E$2:$E$4>=$E$7
$F$2:$F$4<=$F$6
$F$2:$F$4>=$F$7
$G$2:$G$4<=$G$6
$G$2:$G$4>=$G$7
$H$2:$H$4<=$H$6
$H$2:$H$4>=$H$7
$K$11=$J$11
$K$12=$J$12
$K$13=$J$13
$K$14=$J$14
$K$15=$J$15
$K$16=$J$16
$K$17=$J$17
$K$18=$J$18

```



**Fig-9**